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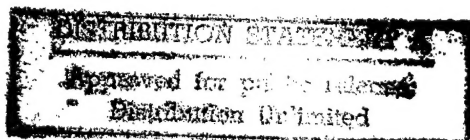
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CARDIOVASCULAR DISEASES

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# HYPOGALACTIA IN PARTURIENTS SUFFERING FROM CARDIOVASCULAR DISEASES

[This is a translation of an article written by A. B. Sigalov in Sovetskaya Meditsina (Soviet Medicine), Vol 23, No 12, Moscow, 1959, pages 61-67.]

From the Obstetrical and Gynecological Clinic (Head -- Prof P. P. Sidorov) of the Medical Institute imeni Stalin (Director -- Docent A. M. Ganichkin)

The correct and full-value nursing of a newborn infant with mother's milk is one of the main factors which ensures its normal development. This is possible in the case of good lactation faculty on the part of the nursing mother, and it depends as well on the characteristics of the newborn infant.

As is known, the intensity of the function of the mammary gland is enhanced by a well-developed net of arterial and venous vessels through which pass various quantities of blood. Therefore, upon impairment of blood circulation and a retarded flow of blood, and also in a number of cardiovascular diseases, one can expect the development of various degrees of hypogalactia in the nursing mother.

With this in view, we carried out observations on 85 parturient women suffering from various cardiovascular diseases causing various degrees of circulation deficiency; of these, two women were under 20 years of age, 56 -- from 21 to 30, 19 -- from 31 to 40, and eight were past 40; primipara held for 29, and multipara for 56.

Twenty-one parturients had compensated heart lesions, and 64 -- heart lesions with various degrees of compensatory disturbances; of these, 35 showed more or less pronounced phenomena of decompensation (edema of the lower extremities, dyspnea, cyanosis of the lips, palpitation, enlargement of the liver, etc.).

Thirty women gave birth on the day following admission to the clinic; nine spent seven days in the clinic before giving birth, 18 -- up to two weeks, seven -- up to three weeks, 14 -- up to one month, and seven -- up to two months.

Of 64 patients with various degrees of circulatory

disturbances during parturition, these symptoms were not completely eliminated in 18 in view of their short stay in the clinic; these patients showed a certain exacerbation of decompensatory phenomena during the early post-partum period. In the other 46 patients, who had received hospital care before labor, no decompensatory phenomena were observed during labor or in the post-partum period.

Twenty-five parturient women received surgical intervention during labor; forceps were applied in 11 cases, Caesarian operation was performed on two patients; extraction of the fetus in pelvic presentation -- in two cases, manual separation of the placenta -- in two cases, manual examination of the uterus -- in three, episiotomy -- in five.

The duration of labor was up to six hours in 25 cases, to 12 hours -- in 29, to 18 -- in 16, to 24 -- in seven, over 24 hours -- in four cases; four patients had precipitate labor. Thus, 70 out of 85 parturient women gave birth within the first 18 hours of labor, including cases of accelerated surgical intervention in order to eliminate the second stage of labor.

The 85 parturients gave birth to 87 infants (two women had twins); one newborn infant died within 24 hours after birth.

Seventy-one newborn infants were breast-fed within eight to twelve hours, and 15 born through operative intervention -- within three to four days following labor. Of all the newborn infants there were three who suckled poorly.

Eighty-three women were discharged with their newborn infants in a satisfactory condition, after a stable elimination of all symptoms of cardiovascular insufficiency; one woman was discharged without the child, and one died in the therapeutic department within 33 days following labor.

We studied in the parturient women the quantitative and qualitative changes of their milk on the fourth, fifth to sixth, and eighth to ninth days following labor (transitory milk), and later, in some of them also after their discharge from the department (ripe milk). Simultaneously, we studied the same changes in 17 healthy parturient women.

To determine the presence or absence of hypogalactia, we calculated the 24-hour quantity of milk, taking into account the milk consumed by the infant (the infant was weighed before and after each feeding), and the drawn-off residual milk.

According to our data, in 17 healthy women used as a control the mean 24-hour quantity of milk was: on the 4th day -- 400 ml, on the 5th to 6th day -- 600 ml, on the 8th

to 9th day -- 700 ml, which corresponds to the data by F. A. Warshavskiy.

In examining women who suffered from cardiovascular diseases during their first nine days following labor, we noted that hypogalactia was observed more frequently in patients with a higher degree of circulatory disturbance than in patients without phenomena of decompensation; or with very negligible circulatory disturbances. Thus, in the first group we found hypogalactia in 26 parturients out of 64, in the second group -- in four out of 21, which does not exceed the mean figures of hypogalactia in healthy parturients in the post-natal period (according to M. S. Maslov -- 15 to 25 percent, and Yashke -- 19.7 percent).

The reduction of the quantity of milk, as well as its retarded flow, was observed in those parturients who had undergone surgical procedures during the process of labor (Caesarean operation, application of forceps); the infant was put to breast in these cases somewhat later than usually (on the third-fourth day). In healthy women, following analogous interventions and a similarly retarded breastfeeding of the infant, we did not detect a reduction of the quantity of milk to the same degree as in patients who suffered from a cardiac condition.

The considerable reduction of the quantity of milk in the post-natal period was observed in 11 out of 18 parturients (150 to 250 ml of milk during the first week after labor) who had not overcome the state of subcompensation (their labor was normal).

In two women, who had undergone a Caesarean operation, marked hypogalactia was observed during the first few days (up to 200 ml of milk per day). The use of a variety of measures (drawing off the residual milk, injection of pituitrin, massage of the mammary glands, etc.) enabled us to obtain a considerable increase of lactation in one case; the quantity of milk in this instance subsequently remained stationary, but it was always lower than the average in healthy parturients. In other instances of a Caesarean operation on the parturient the quantity of milk remained clearly inadequate, (200 to 300 ml in 24 hours) in spite of the use of the same measures which had been applied to the other patients, and during the fourth week of the post-natal period the secretion of milk ceased completely.

The reduction of milk in the early post-natal period was also observed in two parturients who were not suffering from a cardiac ailment but who had undergone a Caesarean operation for a clinically narrow pelvis; however, this reduction was less pronounced. Subsequently, normal lactation was established.

We observed a reduction in the quantity of milk during the first six-eight days of the post-natal period in seven parturients who had suffered considerable loss of blood during the third stage of labor, which had required intra-uterine intervention in five of them.

Hypogalactia of short duration was observed in four parturients out of 11, following application of obstetrical forceps.

In order to study qualitative changes in the milk, we determined in all 85 parturients the quantitative content of protein, fat, sugar, calcium, phosphorus, and vitamin C in their milk. These examinations were carried out on identical days during the post-natal period.

In order to study the qualitative changes in the milk which depended on the degree of affection of the cardiovascular system, we divided the parturients into two groups: 1) parturients (50 women) with compensated heart lesions, or with moderately pronounced phenomena of impaired blood circulation (Table 1); 2) parturients (35 women) with pronounced phenomena of impaired circulation (Table 2).

Table 1

Milk Ingredients	Content--according to both our data and the data in the literature--of the transitory milk in healthy parturients, within the limits.	Average quantity (1) on 8th-9th day in the transitory milk in 50 parturients of the first group.
Protein, in percentages	1,6 - 2,1	2,16
fat, "	2,8-4,8	3,16
sugar, "	5,7-7,8	6,51
Calcium, in mg percent	0,036-0,045	0,043
phosphorus, in mg percent	0,029	0,042
Vitamin C, in mg percent	3-7	1,92

(1) The quantitative content of these compound parts of milk on the 4th and 5th-6th day following labor was nearly the same.

Table 2

Milk ingredients	Content according to both our data and the data in the literature -- of the transitory milk in healthy parturients within the limits.	Average quantity (1) on the 8th-9th day in the transitory milk in 35 parturients of the second group
Protein, in percentages	1,6--2,1	2,17
Fat, "	2,8--4,8	3,10
Sugar, "	5,7--7,8	6,00
Sodium in mg percent	0,036--0,045	0,042
Phosphorus, in mg percent	0,029	0,024
Vitamin C, in mg percent	3,0--7,0	1,85

- (1) Quantitative content of these compound parts of milk on the 4th and 5th-6th day following labor was nearly the same.

As a result of the examination of milk ingredients in 85 parturients we obtained the following data:

As may be seen from Tables 1 and 2, there is considerable reduction of the amount of vitamin C in the transitory milk of both groups; other ingredients are within average norms. In parturients whose labor ended in operative intervention, the amount of vitamin C in the transitory milk was considerably reduced.

The reduction of vitamin C content was observed in all seasons of the year, but it was most pronounced during the winter and spring months, a fact which corresponds to the data in the literature (V. A. Bogdanova, M. R. Nygmanova, M. V. Bondar).

In order to study lactation in parturient women who had been discharged, we examined them at home or called them to the clinic.

Of 85 nursing mothers who had been discharged from the obstetrical department we received information from 54 parturients. In 28 of them there was a more or less pronounced hypogalactia from the very beginning of the post-natal period. Three parturients ceased nursing for medical reasons on account of an insufficient amount of milk; pronounced hypogalactia was observed in 25 women from the very first days of the post-natal period, and satisfactory lactation was subsequently established in 14; 11 children began to receive supplementary feeding on account of an insufficient amount of milk at various periods -- within two to six months after birth.



In one parturient with good lactation during the early post-natal period, hypogalactia developed in the third month, and in another -- in the fifth month after labor. In these women a periodic decline in their state of health which was connected with their cardiac condition, was observed.

Upon the examination of the qualitative content of the same milk ingredients in the course of six months in five nursing mothers who had a cardiovascular disease, we were able to note also a considerable reduction of vitamin C content even in ripe milk, while other ingredients remained within the average normal limits.

In order to increase the vitamin C content of milk in a number of parturients suffering from cardiovascular diseases, we employed therapeutic nutrition; this included products rich in vitamin C (lemons, infusions of dog rose, ascorbic acid, etc.). All parturients who received such nutrition showed a twofold to threefold increase of this vitamin in the milk within a few days after the administration of an increased amount of vitamin C.

### Conclusions

1. Hypogalactia is encountered much more frequently in parturients who suffer from cardiovascular diseases accompanied by symptoms of impaired blood circulation than in healthy parturients. Surgical interventions and the concomitant retarded breast-feeding of the infant, loss of blood in labor, and painful sensations further reduce lactation in this group of women.

2. Early hospitalization of pregnant women with diseases of the cardiovascular system, together with timely therapy, often leads to a stable elimination of the symptoms of impaired circulation, contributes to the reduction of the number of surgical interventions in labor, and serves as prophylactic measures of hypogalactia in these patients.

3. In connection with the low indices of vitamin C in the transitory and ripe milk, the parturients who suffer from cardiovascular diseases must receive products rich in vitamin C (infusion of dog rose, lemons, etc.) for at least the first six months following labor.

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